

BIOGRAPHY

With R.W.A.'s Compliments.

TESTIMONIALS

IN FAVOUR OF

Robert William Atkinson, B.Sc. (Lond.), F.C.S., F.I.C.,

*Late Professor of Chemistry in the Imperial University of
Tokio, Japan,*

Candidate for the Chair of Chemistry

IN

UNIVERSITY COLLEGE, LONDON.



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To the Council of University College, London.



MY LORDS AND GENTLEMEN,

I beg leave respectfully to offer myself as a Candidate for the vacant Chair of Chemistry in the University College, London. In support of my application, I have the honour to submit Testimonials from several eminent Chemists and other gentlemen who have had opportunities of forming an opinion as to my qualifications for such a position.

I was born in April, 1850. After having received my schooling at the Grammar School of Newcastle-upon-Tyne, and University College School, London—then under the Head-Mastership of the late Prof. T. H. Key, F.R.S.—I entered University College, London, in 1867, and in that year I took the first prizes in the classes for Geology and Mineralogy, and I also matriculated at the University of London. tr/

In 1868 I was first on the list of successful candidates for the Royal Exhibitions at the Royal School of Mines, and the session of 1868-69 I spent in the Chemical Laboratory of that Institution under Dr. Frankland, F.R.S. At the examination I obtained a first-class in Chemistry, and also in Experimental Physics; and in the following year I took the Royal Scholarship for Geology and Mineralogy.

During the next session I practised Assaying in the Metallurgical Laboratory of the Royal School of Mines, and I attended the Lectures on Metallurgy given by Dr. Percy, F.R.S. At the first examination for the degree of Bachelor of Science at the University of London, in the same year, 1871, I took Honours in the subjects of Chemistry and of Experimental Physics.

In the autumn of 1871 I entered the Chemical Laboratory of University College, London, for the purpose of carrying out some experiments, and was almost immediately afterwards appointed Laboratory Assistant by Dr. A. W. Williamson, in which capacity I had charge of the students for the three years 1871 to 1874. In addition to this teaching, I occasionally lectured in place of Dr. Williamson and of Dr. Graham, when required to do so, and during the whole time I had the advantage of constant communication with both Professors.

At the second examination for the degree of Bachelor of Science at the University of London, in 1872, I took first-class Honours in Chemistry, and obtained the University Scholarship with the style of "University Scholar," the only occasion upon which it fell to a student of University College, London, between the years 1863 and 1884, and the only award to anyone between 1867 and 1874.

I have not taken the degree of Doctor of Science, as the time required by the University regulations to elapse between the two examinations had not expired when I left England for Japan in 1874. Had I remained in England, it was my intention to have proceeded to that degree.

In 1874, on the recommendation of Dr. A. W. Williamson, For. Sec. R.S., I was appointed by the Japanese Government to the post of Professor of Chemistry in the University of Tokio, Japan, a position which I held for seven years, at the end of which time I resigned, notwithstanding the desire expressed by the Japanese Government to retain my services. My reasons for leaving Japan were purely personal, and were not due in any way to caprice or ill health; in fact, during the seven years I lived in Japan, I was not absent from the University as many days on account of illness. My relations with the Authorities were throughout most cordial, and we parted with the utmost friendliness and mutual regard.

When I arrived in Japan in 1874, I found that the entire instruction in Chemistry had to be organized, and my first work was to make arrangements for enabling the students to study the subject practically. In the course of a year-and-a-half the University Authorities provided me with a building specially constructed for Chemical work and for Assaying, including a Lecture Room and special rooms, so that the instruction in Chemistry was altogether given in a building isolated from the body of the University buildings.

The special course in Chemistry was of three years duration, and was arranged as follows: it being understood that these students, in common with all other students in the Science Department, had gone through one year's course of lectures in Elementary Chemistry.

First Year.	{	Qualitative Analysis. Inorganic Chemistry. Physics. Mineralogy.
Second Year	{	Quantitative Analysis. Organic Chemistry. Chemical Technology. Metallurgy. Physics.
Third Year.	{	Quantitative Analysis. Assaying. Chemical Technology, Preparation of Graduating Thesis.

In addition to the course indicated above lectures and laboratory instructions were given to students of other departments of the University; thus the students who had selected the Geological division were required to spend a certain time in the Chemical Laboratory, and lectures on Metallurgy were also given to the students of Engineering. Further particulars of the scheme of instruction may be obtained by reference to the Calendar of the University of Tokio, Japan (p.p. 37-42), a copy of which I have the honour to send for the use of the Council.

From time to time the Education Department sent to Europe certain of my students to continue their scientific studies, mainly with the intention of giving them the opportunity of becoming practically acquainted with the manufacturing operations not existing in Japan. Of these students several entered the laboratory of the Owen's College, Manchester, under Professor Roscoe; others entered the laboratories of University College, London, and of the Royal School of Mines. Dr. Williamson and Dr. Graham have referred in their testimonials to the positions taken by some of them.

During the last six months of the third year, each student intending to graduate in Chemistry was required to present a thesis based upon original work performed by himself in the Chemical Laboratory, and some of the theses thus prepared were found to contain so much matter of interest as to deserve publication. A few were published by the University, others appeared in the *Journal of the Chemical Society*, the *Chemical News*, and the *Journal of the Society of Chemical Industry*.

My constant endeavour was to interest the students in work which they themselves could perform, in order to make them as self-reliant as possible, and I rejoice to say that the majority of them now occupy in Japan positions in which the knowledge thus acquired is of service to them. Two of my earliest pupils, after a residence in England and in the United States, now occupy the chairs of Inorganic and Organic Chemistry in the Tokio University, whilst to a third was awarded a Fellowship at the Johns Hopkins University, Baltimore, U.S.A. Another of my former pupils is Chemist to the Geological Survey of Japan, and has recently published some very interesting researches on the Chemistry of Japanese Lacquer in the *Journal of the Chemical Society of London*.

In addition to the regular teaching work of the University I found time to carry out some original researches which have since appeared in the Proceedings of the Royal Society of London, and in the Journal of the Chemical Society. The titles are given in an Appendix. The University did me the honour to publish as one of its Science Memoirs a detailed examination of the Chemistry of the brewing of Japanese *Saké*, the liquor fermented from rice, a copy of which accompanies this application.

On my return to Europe I spent the Winter of 1881-82 in the Laboratory of the late Professor A. Wurtz at the Ecole de Médecine, Paris, and part of that of 1882-83, by the kindness of Dr. Williamson, in the Laboratory of University College, London,—the result of my work during this period being embodied in a Paper read before the Chemical Society of London entitled “Some Compounds of Antimony and Bismuth containing two halogens.”

Since that time I have been engaged in Analytical practice in Cardiff, and in that way have made practical acquaintance with the details of the iron and coal industries. Original work done here has related to the critical examination of the methods in use for the volumetric estimation of iron, alumina, and manganese.

From the foregoing remarks it will be seen how much attention I am inclined to pay to the experimental and observational teaching of scientific subjects; mere lecturing I do not consider to be suited to the wants of students of the present time, and I should therefore make my teaching as practical as possible.

If the Council of University College, London, do me the honour to appoint me to fill the Chair of Chemistry, it will be my earnest endeavour to advance the interests of the College by careful attention to the duties of the post.

I have the honour to remain,

My Lords and Gentlemen,

Your most obedient Servant,

ROBERT WM. ATKINSON.

15th April, 1887.

APPENDIX.

Titles of Papers on Chemical Subjects written by R. W. ATKINSON :—

" On Persulphocyanic Acid "	Journal Chemical Society, 1877.
" On Perthionate of Silver "	" " 1879.
" On Menthol and its derivatives "	" " 1882.
" On Compounds of Antimony and Bismuth containing two halogens "	" " 1883.
" On the Diastase of Koji "	Proceedings Royal Society, 1881.
" On the Formation of Diastase from Grain by the action of moulds " Journal Society Arts, 1883.
" On Water Supply of Tokio "	Transactions Asiatic Society, 1877.
" On Manufacture of White Lead in Japan "	" " " 1878.
" On Malt Sugar "	" " " 1879.
" On Porcelain Industry of Japan "	" " " 1880.
" On Brewing in Japan " Chemical News, 1881.
" On Volumetric Estimation of Iron "	" " " 1884.
" On Estimation of Alumina "	" " " 1886.
" On Volumetric Estimation of Manganese "	Journal Soc. Chem. Indust., 1886.
" On Japanese Lacquer " " Industries," October, 1886.
" On Japanese Soy Manufacture "	" " January, 1887.
" On the Chemistry of Saké Brewing "	6th Mémoir of the Science Department of the University of Tokio. One copy accompan- ies this letter.

TESTIMONIALS:

UNIVERSITY COLLEGE SCHOOL,
GOWER STREET, LONDON,
March 30th, 1882.

Mr. R. W. ATKINSON entered this school at Michaelmas, 1863, and left at Easter, 1867, continuing his studies at University College, and, subsequently, at the Royal School of Mines. He made good use of his educational opportunities whilst at school, and passed the Matriculation Examination of the University of London in June, 1867. Whilst still with us he had already given proof of his predilection for scientific studies, and had excited in us the feeling of affectionate interest with which we have watched his subsequent career.

E. R. HORTON, M.A.,
Fellow of St. Peter's College, Cambridge.

HEATON DENE, JESMOND VALE,
NEWCASTLE-ON-TYNE,
April 6th, 1887.

I have intimately known Professor R. W. ATKINSON from his boyhood, and have the highest opinion of his moral character and of his abilities as a Chemist and Scientist. He has always shown a lively interest in the application of scientific discoveries to manufacturing processes.

JOHN GLOVER,
Late President of the Newcastle-on-Tyne Chemical Society.

NORMAL SCHOOL OF SCIENCE,
SOUTH KENSINGTON MUSEUM,
22nd March, 1884.

DEAR PROFESSOR ATKINSON,—In compliance with your request I have pleasure in offering my testimony to your competency for the post of Professor of Chemistry in the University College of North Wales.

I first made your acquaintance as a Royal Exhibitioner in the Royal College of Chemistry in the year 1868. In that and the following year you were one of my best pupils, and you obtained a first-class in Chemistry and Physics in 1869. In 1870 you still further distinguished yourself by taking one of the Royal Scholarships in the Government School of Mines. In 1874 you were appointed Professor of Chemistry in the University of Tokio, Japan, a post which you continued to hold until September, 1881. My knowledge of your abilities as a Chemist, derived both from personal intercourse with you and from your published researches, lead me to the conclusion that, after the large experience you have had as a teacher, you would occupy the vacant chair at Bangor with credit to yourself and satisfaction to the governing body of the College.

Believe me, very truly yours,

E. FRANKLAND, Ph.D., F.R.S.,

Late Professor of Chemistry in the Normal School of Science, South Kensington.

MUSEUM OF PRACTICAL GEOLOGY,

1st April, 1887.

Having known Mr. ROBERT WILLIAM ATKINSON from the time he entered the Royal School of Mines, in 1868, I have great pleasure in expressing my high opinion of his natural ability and scientific attainments. Mr. ATKINSON entered the School at the head of the list of Royal Exhibitioners, and afterwards took a distinguished place in the examinations in Chemistry and Physics, in Geology and Mineralogy. As a proof of his success as a student, I may remark that a Royal Scholarship was awarded to him in 1870.

Of his work at University College, London, and in the University of Tokio, others can speak with fuller knowledge, but I may fairly add that the high expectation formed of him as a student has been fully borne out by his subsequent career.

I can conscientiously say that I believe Professor ATKINSON to be an enthusiastic teacher, an accomplished chemist, an exact thinker, and a man of high moral character.

F. W. RUDLER, F.G.S., &c.,

*Curator of the Museum of Practical Geology; Late Registrar of the
Royal School of Mines.*

UNIVERSITY COLLEGE, LONDON,

22nd March, 1882.

Mr. ROBT. WM. ATKINSON has been long and intimately known to me. He was a student in the Laboratory of this College in 1871, and distinguished himself so greatly as to be appointed laboratory assistant in that same year. In this capacity he taught analytical chemistry, theoretically and practically, to the students, and fully realized the high expectations which I had formed of his qualifications for such duties. In 1874 he was appointed, on my recommendation, to the Professorship of Chemistry in Tokio, Japan, and during the seven years which he remained in that post I had frequent opportunities of hearing that he was found to be thoroughly efficient and successful. Several of his native pupils came to this country to follow up their scientific studies, and few young men came to the colleges of this country so well grounded in scientific work and with such thoroughly good training. One of these young men in especial I must mention (Mr. Sakurai), who left this College at the end of last Session to undertake in Tokio the duties of the chair of Chemistry which Professor ATKINSON was resigning. Sakurai was while here the most distinguished student in the College, having extended the Science of Chemistry by his important discoveries of compounds of mercury with methylene, published by the Chemical Society and the British Association.

While assistant here Mr. ATKINSON took a most distinguished degree at the University of London, and since leaving this College he has proved by various published experimental investigations that he is as capable of extending our Science as of teaching its doctrines and methods.

His delivery in lecturing is clear and connected. I have only to add that Mr. ATKINSON never fails to gain the esteem and regard of those with whom he comes in contact.

ALEX. W. WILLIAMSON, Ph.D., For. Sec. R.S.,
Professor of Chemistry in University College, London.

UNIVERSITY COLLEGE, LONDON,
 March 24th, 1884.

Understanding that my friend Mr. ATKINSON is a Candidate for the Professorship of Chemistry at the University College of North Wales, I have much pleasure in adding my testimony in support of his application.

Mr. ATKINSON I have known intimately since 1871. As a young man he gained high University honours; and the promise thus given of exceptional ability was amply verified by his success as a teacher while he remained at University College. In 1874 Mr. ATKINSON was appointed Professor of Chemistry at the Imperial University of Japan. While there he taught Theoretical and Applied Chemistry, and two of his pupils were sent to England (Messrs. Sakurai and Takamatsu). These gentlemen have not only obtained the Gold Medals for the Highest Examination Excellence at University College, London, and at the Owen's College, Manchester, but have also contributed important original investigations to the British Association, and to the Chemical Society of London.

Mr. Takamatsu continues his investigations at the Owen's College; Mr. Sakurai has left University College on his appointment as Professor of Chemistry. I cite these examples of his work while abroad not on account of the examination excellence obtained by his pupils in two of the most important Chemical Laboratories in England, but because these pupils have proved that their early training was directed to developing powers of observation and research.

During the years 1872, 1873, 1874, I had daily experience of Mr. ATKINSON's wide knowledge of Chemistry, and of his ability as a Teacher. While here he gained much experience as a Teacher of Chemistry, Theoretical and Practical, not only in his official position as Demonstrator in the Laboratory of Chemistry, but also as a Lecturer. He on many occasions replaced me in the conduct of my class;

he also aided in the instruction of the large Medical Class in Analytical Chemistry. His teaching was characterised by a thoroughness, clearness, and facility of expression, which led my colleague (Professor Williamson) and myself to form a high opinion of his knowledge, and his powers of imparting it to others.

Though Mr. ATKINSON's work has chiefly been directed to Pure Chemistry, he yet, as Lecturer on Chemical Technology in Japan, and in his important original contributions in various branches of Applied Chemistry, has given proofs of a wide knowledge of the applications of the Science. This, I deem, will prove of the highest advantage to the students of the University College of North Wales, because enabling him to give technical instruction to students of Chemistry in the Laboratory during the final part of their study at the College, so as to prepare young men to undertake technical analyses and investigations at once in joining a manufactory.

From the 10 years' experience and the high excellence obtained by Mr. ATKINSON as a teacher; from the thoroughness and accuracy of his work, his punctuality in its performance, and his high moral and intellectual qualities, I am confident that should Mr. ATKINSON be appointed to the vacant Professorship at Bangor, he will prove a success, and gain the esteem of the Council and of the students of the College.

CHAS. GRAHAM, D. Sc. (Lond.),
Professor of Chemical Technology in University College, London.

THE ROYAL NAVAL COLLEGE, GREENWICH, S.E.,
April 4th, 1887.

I have read with much pleasure a paper entitled "On the Diastase of Koji," Proceedings of the Royal Society, 1881, by R. W. ATKINSON, Esq., B.Sc. The experiments described in this paper appear to have been conducted with great care and perseverance, and prove Mr. ATKINSON to be a competent and accomplished Chemist. He has also received an excellent education at University College, London, and acquired considerable experience as a Teacher of Chemistry. I hope that Mr. ATKINSON may soon obtain a position in one of the public institutions of the country suitable to his acquirements.

DR. H. DEBUS, F.R.S.,
Professor of Chemistry in the Royal Naval College, Greenwich.

TOKIO DAIGAKU (UNIVERSITY OF TOKIO), JAPAN,

PROF. R. W. ATKINSON.

June 16th, 1881.

DEAR SIR,—It was in May of the seventh year of Meiji¹ that you were first appointed Professor of Chemistry in this University, and though you once returned home in September, of the eleventh year of Meiji,² upon the expiration of the term of your first engagement, you accepted again the same Professorship, and, coming to Japan in February, of the twelfth year of Meiji,³ again entered the same service. Since your first appointment you have been in the service of the University altogether about seven years, during which time you have taught the students always with such diligence and skill that they have attained their present state of progress. Indeed, I cannot help expressing our gratitude for the valuable services you have rendered to the University, and now upon your returning home I beg to present to you the following articles:—One Pair of Bronze Vases, Two Rolls of Yamatonishiki (Silk Brocade), which, I hope, you will accept.

With my best wishes for your future success and prosperity.

I am, Sir, yours most respectfully,

H. KATO.

(¹) 1874. (²) 1878. (³) 1879.

President of the University of Tokio, Japan.

NOTE.—The above letter is an official translation of a document in Japanese, both given to me at the time of my departure from Japan. The year 1868 was the first year of the present year-period, Meiji, which signalized the accession of the present Emperor.—R.W.A.

JAPANESE LEGATION, LONDON,

March 8th, 1882.

I have the honour to certify that Mr. R. W. ATKINSON held the appointment of Professor of Chemistry in the University of Tokio for about seven years, and that during that period his special knowledge and ability were fully recognised by the authorities, and by the students who had the advantage of studying under his care.

As I was myself in Japan, while Mr. ATKINSON held the above appointment, I can also testify from personal observation as to the high estimation which that Professor enjoyed, in official as well as in scientific circles.

MORI,

*Late Envoy Extraordinary and Minister Plenipotentiary of H.I.M.
the Emperor of Japan, at the Court of St. James.*

8, HIGHBURGH TERRACE, DOWANHILL,
GLASGOW,

7th April, 1887.

I enjoyed the friendship of Mr. ROBERT W. ATKINSON during the seven years he acted as Professor of Chemistry in the Tokio Daigaku, or University, and from personal knowledge, from the opinions of others well qualified to judge, and from the success which has attended his students, I can certify that he is a thoroughly able Professor and investigator.

As a Teacher, he has had long experience in training students not only in Pure Chemistry, but also in its applications to the Industrial Arts, and he is well-known as an original investigator in various branches of his subject, many of his papers having been published in the Transactions of the Royal and Chemical Societies.

It would give me much pleasure to hear of Mr. ATKINSON's success in his application for the Professorship of Chemistry in University College, London, as I am sure he would sustain the high reputation of that position.

HENRY DYER, C.E., M.A.,

*Life Governor of the Glasgow and West of Scotland Technical College ; formerly
Principal of the Imperial College of Engineering, Tokio, Japan.*

49, CHANCERY LANE,

March 27th, 1887.

I have much pleasure in bearing my testimony to the eminent fitness of Mr. ATKINSON for the position he now seeks.

Mr. ATKINSON and I were colleagues for more than four years at the Imperial University of Tokio, Japan. This fact gave me unusual opportunities of observing Mr. ATKINSON's great talent, both as a Teacher and as Principal of an important School of Chemistry. Mr. ATKINSON had to begin from the very beginning. His pupils, when he went to the University, had only the most rudimentary notions of chemical science—there was no apparatus worthy of the name, no provision for experimental science. Thanks to Mr. ATKINSON's untiring energy and zeal, no

department of the University progressed so quickly as did the chemical department ; and when he left Japan, the Chemical School of the University would bear comparison even with the best schools of England.

But Mr. ATKINSON also obtained eminent success as a Teacher. His pupils have gained the greatest distinction at the Colleges of Great Britain and America, and those whom I have met in England have always spoken with the deepest admiration of their former teacher.

With the Japanese officials he was on the most cordial terms, and his services were, to my knowledge, most highly appreciated by them.

At the meetings of the Faculty of the University Mr. ATKINSON's presence was always welcome, as he showed a keen interest in other departments of the University besides his own, and his time and advice were always at the disposal of those of his colleagues who needed them.

I cannot well conceive that a more excellent candidate could be found.

WM. E. GRIGSBY, M.A., LL.D. (Lond.), D.C.L. (Oxon),

Barrister-at-Law ; late Professor of Law in the University of Tokio, Japan.

UNIVERSITY OF THE STATE OF NEW YORK,

OFFICE OF THE REGENTS,

ALBANY,

April 4th, 1884.

From the year 1873 to 1879 I was in the service of the Japanese Government as Adviser to the Department of Education. During the whole of that time Mr. R. W. ATKINSON held the position of Professor of Chemistry in the University of Tokio, and I had almost daily opportunities to meet him and to become familiar with his work in the University. From my observation of his work, and my personal knowledge of the high esteem in which his services were held by the Government, I have no hesitation in expressing my very high opinion of his ability as a scientific man, and of his efficiency as a Teacher of Science.

His duties in the University pertained in a large degree to organising and inaugurating a system of instruction in Chemistry, and required for their successful fulfilment talents of a high order.

His extended and successful experience, taken together with his ability and energy, will, I am confident, ensure his fitness to undertake similar duties anywhere. I take great satisfaction, therefore, in recommending him as, in my judgment, eminently qualified for a Professorship of Chemistry.

DAVID MURRAY,

Secretary of the University of the State of New York, U.S.A.

MASON SCIENCE COLLEGE,

BIRMINGHAM,

April 5th, 1887.

TO THE COUNCIL OF UNIVERSITY COLLEGE, LONDON.

Mr. R. W. ATKINSON having informed me of his intended candidature for the Chair of Chemistry in University College, London, I beg to say that I believe his appointment would be advantageous to the College because of the thoroughness of his knowledge of his special science, and because in his teaching and in his researches he has shown a very just appreciation of the importance of practical as well as of theoretical aims. Not being a Chemist, I cannot offer any opinion as to the value of his special work, but I have had ample opportunity of judging fairly of his capacity as a Teacher and in the sphere of professional duties generally. In the Japanese Imperial University I worked with him as a colleague for four years. His department was in close connection with my own, and to a great extent we taught the same pupils. I was continuously intimate with him in private society during those years.

His pupils prospered well under his tuition. He was held in very high esteem by his colleagues and his friendship was greatly valued by them. The Government of Japan recognised his services as so valuable that they retained him as long as it was possible to persuade him to remain abroad, and offered him special inducements to prolong his stay with them. His excellent social qualities made him a general favourite, not only among his English friends resident in Tokio, but also among the Japanese officials and particularly among his pupils.

His success in Japan was achieved under circumstances of special difficulty. The explanation in a language which is not the native language of the scholars, of scientific details and technicalities tests severely one's teaching power. Again, success with Japanese students is success of a high order. My experience of teaching both there and here has led me to believe that the intellectual standard of the Japanese student is on a higher average level than that of the English student.

Professor ATKINSON had to create *de novo* the Chemical School in the Tokio University. The experience gained in the organization of a School from the beginning is of a very valuable kind to a Professor, and is such as comparatively few Professors have the opportunity of obtaining.

ROBERT H. SMITH, M.I.M.E. ; Assoc. M.I.C.E.

Professor of Engineering in the Mason Science College ; late Professor of Engineering in the University of Tokio, Japan.

